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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/523,990	03/13/2000	Mou-Shiung Lin	MEG99-005	6138
28112	7590	04/06/2005	EXAMINER	
GEORGE O. SAILE & ASSOCIATES			WALSH, DANIEL I	
28 DAVIS AVENUE			ART UNIT	
POUGHKEEPSIE, NY 12603			PAPER NUMBER	
			2876	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/523,990

**Applicant(s)**

LIN ET AL.

**Examiner**

Daniel I. Walsh

**Art Unit**

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-23 and 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-23 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Receipt is acknowledged of the Amendment of 25 January 2005.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-10, 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromasa (JP362169448) in view of Afzali-Ardakani et al. (US 6,746,053).

Hiromasa teaches a method of marking an electronic integrated circuit chip having surfaces comprising forming visible internal marking indicia on a marking location upon an exterior surface of the chip for identification of the chip, and forming an optically transmissive encapsulating material over at least the marking location on the one exterior surface of the chip

which optically transmissive material cannot be scraped off the chip for prevention of replacement of the visible internal marking indicia by different markings (FIG. 4). Hiromasa is silent to the resin being an epoxy resin, (which would constitute a material that cannot be scrapped off, unlike a removable coating such as varnish, paint, or removable layer, as described in Applicants remarks of October 2002). However, the Examiner notes that the use of transparent epoxy resin for encapsulation, sealing, etc. is well known and documented in the art (see US 5,936,264 and 6,352,880 as just a few examples of transparent epoxy resin encapsulant/sealants). Epoxy resins are generally superior to other resins, for example, in terms of moldability, adhesion, electrical characteristics, moisture resistance, etc. , which makes them desirable for semiconductor devices. Accordingly, it would have been well within the skill to use an epoxy resin as the resin of Hiromasa, for such reasons. Re claims 4, 8, 10, 18, 20, 21, and 23 Hiromasa teaches identifying marks and characters on the chip, but is silent to the use of a barcode (and illuminating means to read the markings as set forth in the claims.

Specifically, Afzali-Ardakani et al. teaches applying a transparent epoxy coating applied as an encapsulant to protect/cover (FIG. 4).

At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of Hiromasa with those of Afzali-Ardakani et al.

One would have been motivated to do this to have internal markings of a chip protected by an epoxy encapsulant/coating while permitting viewing of the markings.

Re claim 2, the material is transparent in that the mark and the like can be viewed through it.

Re claim 3, epoxy provides protection from damage from handling and environmental handling factors. Additionally, epoxy is cited in the Applicants Specification as an appropriate material.

Re claims 4, 8, 10, 18, 20, 21, and 23 the Examiner notes that the use of barcodes to represent information is well known and conventional in the art, motivated by being able to store information in a machine-readable format that provides for more data storage, and one that can be accurately read by machines to provide information. Therefore, the use of a barcode to replace printed letters/characters (of Hiromasa) is an obvious expedient to provide a machine-readable data storage, which provides expected results. The use of barcodes to store information is well known and conventional (Afzali-Ardakani et al. teaches barcodes, as does Shaw et al., as mentioned in the previous Office Action, etc., both of which teach reading a barcode through a protective coating). The Examiner notes that barcodes are read by directing electromagnetic radiation upon the marking indicia and reading the indicia in response to images provide by reflections of the radiation.

Re claim 5, though the prior art is silent to a colored material, the examiner notes that transparent colored materials (epoxies) are well known and conventional in the art. The use of colored materials provide the expected results of improved contrast, aesthetics, reducing the signs of wear or dirt, color match, providing identification, etc. Simply changing a color is well within the ordinary skill in the art, motivated by the aforementioned reasons. It does not patentably distinguish the claim from that of the prior art, as the prior art appears to function equally well with a colored material, as long as the information is visible. If the Applicant believes that a transparent colored encapsulant patentably distinguishes the invention from non-

colored transparent encapsulants, a restriction maybe enforced. Re claim 6, the teaching of an epoxy/epoxy resin has been discussed above.

Re claim 7, it has been discussed above that the encapsulating material prevents remarking and is transparent. Though silent to remarking silicon, the Examiner notes that it is conventional for IC packages to include silicon (as chips are typically constructed of silicon). Accordingly, it would have been obvious that the material prevents remarking silicon, as such packages and semiconductor devices are commonly made with silicon to provide desirable electrical properties, as known in the art.

Re claim 9, the limitations have been discussed above re claim 5. As a transmissive material, it is obvious that the material be non-black, to permit reading.

Re claim 13, the limitations have been discussed above re claim 1.

Re claim 14, the limitations have been discussed above re claim 2.

Re claim 15, the limitations have been discussed above re claim 5.

Re claim 16, the limitations have been discussed above re claim 1.

Re claim 17, the limitations have been discussed above re claim 7.

Re claim 19, the limitations have been discussed above re claim 3.

Re claim 22, the limitations have been discussed above re claim 5.

3. Claims 12 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromasa/Afzali-Ardakani et al. in view of Rostoker.

The teachings of Hiromasa/Afzali-Ardakani et al. have been discussed above.

Though silent to the color of the material is also used to provide identification (in addition to the indicia), the Examiner notes that using color to provide information is old and well known.

Specifically, Rostoker teaches that color can be used to provide information (abstract).

At the time the invention was made, it would have been obvious to combine the teachings of Hiromasa/Afzali-Ardakani et al. with those of Rostoker.

One would have been motivated to do this in order to use color to provide information. Though Rostoker is silent to the optically transmissive material coloring, the Examiner notes that Rostoker is relied upon for the general teaching of color providing semiconductor device information. Employing the color teachings of Rostoker to those of the material would have been well within the skill in the art, for information providing means, especially since it is well known in the art that epoxy/resins can be of different colors.

#### ***Response to Arguments***

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. The Examiner notes that the prior art of Shaw et al. did indeed provide visible internal markings, as the markings are etched, and therefore are visible. Additionally, as the Applicant did not recite when the indicia was to be visible, since the indicia of Shaw et al. is readable under certain light conditions, it is interpreted as visible. Nonetheless, in an effort to expedite prosecution, the Examiner has cited the new art of Hiromasa which clearly shows indicia/marks visible under normal lighting circumstances.

***Additional Remarks***

5. The Examiner questions the Applicants contention that the encapsulating material cannot be scraped off the chip. The Examiner notes that the Applicant states that epoxy is a material that bonds and therefore cannot be scraped off the surface. However, the Examiner disagrees and believes that it can indeed be scraped off. The Examiner requests further clarification as to the phrase "cannot be scraped off" especially in light of the fact that epoxy can be scraped off, which is contrary to that disclosed by the Applicant. If the Applicant means for the encapsulating material cannot be scraped off without destroying the chip, the indicia, showing signs of tampering, etc. the Examiner notes that such limitations are not recited in the claims.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Inomata 9US 2005/0051909), Suzuki et al. (US 2005009298), Maeda (US 2004/0265596), Kudo (US 2004/0256463), Katoh et al. (US 2003/0161112), Dlugokecki et al. (US 2003/0126741), Maruyama (US 2001/0042901), Katoh et al. (US 6,796,024), Minamio et al. (US 6,680,220), Katho et al. (US 6,559,536), Takiar et al. (US 6,448,632), Sokolovsky (US 4,537,059), Vinton (US 4,125,418), Grigg et al. (US 2003/0072926 and 6,489,007), Koizumi (US 6,420,790), Omizu (US 6,143,587), Suzuki et al. (US 6,717,256), Takai et al. (US 6,352,880), Akram (US 6,400,032), Afzali-Adrakani et al. (US 6,817,538), Tanaka (JP405166949), Yoshida et al. (JP363263748), Karasawa (JP402246247), and Beibi et al. (JP02002175656).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Walsh whose telephone number is (571) 272-2409. The examiner can normally be reached between the hours of 7:30am to 4:00pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone numbers for this Group is (703) 308-7722, (703) 308-7724, or (703) 308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to **[daniel.walsh@uspto.gov]**.

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more

clearly set for the in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



DW  
3/25/05



KARL D. FRECH  
PRIMARY EXAMINER